

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

CLAIMS LISTING (all of submitted claims 1-33, 34-56)

Claims 1-21: *(Canceled).*

Claims 22-29: *(Canceled).*

Claims 30-32: *(Canceled).*

Claim 33: *(Canceled).*

Claim 34 *(Currently Amended):* A machine-implemented method that defines an image displayed by ~~for use with~~ a display device having M color sources each respectively outputting a respective one of M unique primary colors, where the display device thereby has a displayable color space that is definable as a polygon disposed within a rectangular gamut space where the displayable color space has $M > N$ primary color points defining vertices of the polygon such that substantially any color point on linear boundaries of the polygon or in an interior of the polygon can be displayed by the M color sources of the display device, where M and N are each a whole number greater than 2 and N defines primary colors of a source color space from which sourced color points are to be rendered by use of the $M > N$ color sources of the display device, said machine-implemented method converting the sourced color points into target color data signals that define said image displayed ~~for display~~ by the display device and said method comprising:

- (a) first identifying for each sourced color point, a corresponding one of a plurality of hypothetical triangular regions as the region inside of which, or on whose boundaries the sourced color point lies, where said hypothetical triangular regions populate the displayable color space polygon and each of the hypothetical regions has a first vertex at a predefined and common interior point inside the polygon and each hypothetical region respectively has two spaced apart points on the boundary of the polygon as respective second and third vertices of the triangular region;

- (b) in response to said first identifying, second identifying a corresponding one of a prespecified plurality of conversion matrices that respectively correspond to the plurality of hypothetical regions, where the identified conversion matrix corresponds to the first identified hypothetical triangular region; and
- (c) using the identified conversion matrix to convert the sourced color point into a corresponding target color data signal that defines said image displayed by the display device.

Claim 35 (Previously Presented): The machine-implemented method of Claim 34 wherein said hypothetical triangular regions do not overlap with one another.

Claim 36 (Previously Presented): The machine-implemented method of Claim 34 wherein said respective second and third vertices of the respective hypothetical triangular regions are defined by vertices of the polygon.

Claim 37 (Previously Presented): The method of Claim 34 wherein said machine-implemented first identifying step (a) includes:
determining a hue angle for each sourced color point and using the determined hue angle to identify the corresponding one of the plurality of hypothetical triangular regions.

Claim 38 (Previously Presented): The method of Claim 37 wherein said machine-implemented second identifying step (b) includes:
coupling a hue indicating signal to selection terminals of a plurality of multiplexers where selective inputs of the multiplexers receive input signals representing different conversion matrices applied to the sourced color points.

Claim 39 (Previously Presented): The method of Claim 34 wherein said common interior point is the white point of the displayable color space.

Claim 40 (Previously Presented): The method of Claim 34 wherein said common interior point is an off-white color point of the of the displayable color space.

Claim 41 (Previously Presented): The method of Claim 34 wherein said M unique primary colors include a red, a blue, a green, and a cyan.

Claim 42 (Previously Presented): A display system comprising:

- (a) a display having M unique color sources each respectively outputting a respective one of M unique primary colors, where the display thereby has a displayable color space that is definable as a polygon disposed within a rectangular gamut space where the displayable color space has $M > N$ primary color points defining vertices of the polygon such that substantially any color point on linear boundaries of the polygon or in an interior of the polygon can be displayed by the M color sources of the display, where M and N are each a whole number greater than 2 and N defines primary colors of a source color space from which first sourced color points are to be rendered by use of the $M > N$ color sources of the display device;
- (b) a first identifier which identifies each of the first sourced color point as corresponding to one of a plurality of hypothetical radial regions by virtue of the first sourced color point being inside the radial region or on a boundary of the radial region, where said hypothetical radial regions populate the displayable color space polygon and each of the hypothetical radial regions has a first boundary point defining a vertex of the radial region, the first boundary point being disposed at a predefined and common interior point inside the polygon from which the radial region radially expands outwardly at least to the boundary of the polygon and where each hypothetical radial region respectively has two spaced apart boundary points disposed on the boundary of the polygon;
- (c) a second identifier which is responsive to the first identifier and identifies a corresponding one of a prespecified plurality of conversion matrices that respectively correspond to the plurality of hypothetical radial regions, where the identified conversion matrix corresponds to the hypothetical radial region identified by the first identifier; and
- (d) a signal converter which uses the identified conversion matrix to convert each first sourced color point into a corresponding target color data signal.

Claim 43 (Previously Presented): The display system of Claim 42 wherein said hypothetical radial regions do not overlap with one another.

Claim 44 (Previously Presented): The display system of Claim 42 wherein said respective second and third boundary points of the respective hypothetical radial region are defined by vertices of the polygon.

Claim 45 (Previously Presented): The display system of Claim 42 wherein each radial region is a triangle, wherein said respective second and third boundary points of the respective hypothetical radial region define vertices of the triangle.

Claim 46 (Previously Presented): The display system of Claim 42 wherein said first identifier includes:

a hue converter that determines a hue angle for each first sourced color point and outputs a hue index signal representing the determined hue angle.

Claim 47 (Previously Presented): The display system of Claim 46 wherein said hue index signal represents a full rotation around the hue circle as a binary coded index value.

Claim 48 (Previously Presented): The display system of Claim 46 wherein said second identifier includes:

a plurality of multiplexers each having plural input terminals and an input selection port, where said hue index signal is coupled to the to input selection ports of the plural multiplexers and where the selectable input terminals of the multiplexers receive input signals representing different conversion matrices applied to the first sourced color points.

Claim 49 (Previously Presented): The display system of Claim 42 wherein said common interior point is the white point of the displayable color space.

Claim 50 (Previously Presented): The display system of Claim 42 wherein said common interior point is an off white point of the displayable color space.

Claim 51 (*Previously Presented*): The display system of Claim 50 wherein said M unique primary colors include white.

Claim 52 (*Previously Presented*): The display system of Claim 42 wherein said M unique primary colors include cyan.

Claim 53 (*Previously Presented*): The display system of Claim 42 wherein said signal converter includes a matrix multiplier and a storage storing matrix coefficients of the prespecified plurality of conversion matrices.

Claim 54 (*Previously Presented*): The display system of Claim 53 wherein said matrix multiplier is a 3 by 3 matrix multiplier.

Claim 55 (*Previously Presented*): The display system of Claim 42 wherein said first sourced color points are defined by coordinate signals specifying coordinates in CIE XYZ space.

Claim 56 (*Previously Presented*): The display system of Claim 55 and further comprising:
(e) a gamut converter that produces the first sourced color points from supplied second sourced color points where the supplied second sourced color points are defined by an N primaries color space.
